

bristles short, only one pair, wide apart. Prothoracic sternum with pale marginal hairs, and sclerite in front of prothoracic stigma with a row of whitish hairs in front. No true prothoracic bristle. Mesopleura with numerous short, dark bristles, longer and stronger on hind margin, especially towards upper corner. Pteropleura with a strong bristle on upper margin and 5-6 small bristles below it. One strong posterior sternopleural bristle.

Wing.—Subcostal vein bristly on upper surface from humeral crossvein to tip; cubital vein the same from radio-cubital node to about half way to crossvein, with an additional isolated bristle just above the crossvein. No bristles on under side of veins.

COLOR, ETC.—The ground color of frons and cheeks is a light mahogany, but the face, jowls, and occiput are darker. The 5-6 grey spots on frons "along each eye" are fairly conspicuous, but Coquillett's "two transverse rows of spots" are really represented by an upper row of four irregular grey spots or patches—one just in front of each front upper orbital bristle and one on each side of front ocellus—and a lower row nearer front of frons of three more or less confluent spots which may also be connected on a narrow median line with the middle ones of upper row. Further there are three small grey patches on vertical ridge.

The manner in which the thorax and abdomen are reticulated or mottled with dusted grey reminds one of similar markings in *Platystoma seminativis*.

NEW TARSONEMID MITES (ORDER ACARINA, FAMILY TARSONEMIDAE).

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In the following paper a new genus and three new species of Tarsenemid mites are described. The new genus, *Locustacarus*, is created for the reception of a new species taken from the tracheae of certain grasshoppers in the State of Kansas several years ago, and studied by Dr. P. S. Welch and L. P. Wehrle. The results of these studies were presented in a joint paper by these two authors at the 1923 meeting of the Entomological Society of America.

Tarsonemus phyllophorus, new species.

Female.—Very long, with subcircular capitulum. Pseudostigmatic organs capitate, head spherical and in diameter equal to the length of the thread-like pedicel; pseudostigmata circular, equal to heads of pseudostigmatic organs in diameter. Slightly above and behind each pseudostigmata is situated a long seta which exceeds in length the width of the cephalothorax.

Abdomen truncate in front and broadly rounded behind, with sides which are almost parallel. Dorsally the abdomen is divided into three subequal areas in front of the insertion of the third legs by two transverse sutures, and behind the third legs into three very unequal areas by two transverse sutures. Dorsally, abdomen nude except for a pair of minute setae situated sublaterally about midway between the second and third pairs of legs. Three pairs of minute setae around the curve of the posterior margin.

Legs rather short; first pair reaching slightly beyond the tip of capitulum; second pair slightly shorter than the first; third pair extending for a little over

half their length beyond the margin of the body; fourth pair slightly shorter than the third. Dorsal terminal seta of tarsus IV flagelliform, equal to the leg in length; ventral terminal seta of tarsus IV straight, rigid, spine-like, half as long again as the tarsus.

Length, 0.20 mm.; width, 0.08 mm.

Male.—Shorter than the female but much broader. Capitulum circular, about one-half as long as the cephalothorax.

Cephalothorax fully as broad as long; above with two pairs of conspicuous setae, the front pair is almost twice as long as the more rigid posterior pair, and is fully equal to the cephalothorax in length.

Abdomen as broad as long and broadest at the region of the third pair of legs; genital papilla considerably broader than the capitulum and with posterior part expanded and bearing a pair of setae.

Legs stout; first pair slightly surpassing the tip of papilla; second pair slightly larger than the first; third pair much the largest and longest of all; last pair reduced. The third pair of legs is dorsolateral in position; coxa about twice as long as broad; femur constricted near the base; patella not as broad as femur, about one and a half times as long as broad; tibia slightly longer than patella; tarsus about as long as tibia, very broad at its base. Femur IV about two-thirds as long as leg IV, on its outer margin, incurved, and on its inner side expanded into a large hyaline leaf-like structure. This expansion of femur IV is oval in shape, broadly rounded throughout, is a third longer than broad, one and a half times as broad as the femur is at its base, and bears above a seta near its base distally which extends fully half way to free edge of the expansion. Patella IV minute, over twice as broad as long and shorter than tibia IV. Tarsus IV reduced to a small chitinous knob.

Length, 0.19 mm.; width, 0.13 mm.

Type locality.—Florida.

Type.—Cat. No. 23777, U. S. N. M.

Described from numerous specimens of both sexes taken from *Phyllostachys bambusoides*, Brooksville, Florida, by H. L. Sanford and from many specimens from same host and place taken by W. B. Wood. Specimens also taken from *Phyllostachys* sp., Yokohama, Japan, November 27, 1922. This species is related to *Tarsonemus spirifex* Marshall, but is easily distinguished from *spirifex* in the characters of the posterior legs of the male. In *spirifex* the base of the femur is about as broad as the leaf-like expansion while in *phyllophorus* it is but little over half as wide; in *spirifex* the part of the femur extending beyond the leaf-like expansion constitutes about half the length of the segment, in *phyllophorus* it constitutes about a fifth of the segment. Also the leaf-like expansion in the two species is shaped differently.

LOCUSTACARUS, new genus.

Three pairs of functional legs present in both sexes. Female without pseudostigmatic organs. Palpi reduced, almost rudimentary. Chelicerae needle-like, curved spirally at base. Tarsi, each with a stout pair of claws and a large,

pedicellate pulvillus. Oviparous; adults hatching directly from eggs. Gravid females greatly enlarged.

This genus is related to *Eutarsopolipus* Berlese, the type species of which was taken at the bases of the wings of a beetle. It differs from Berlese's genus in that the female is provided with a dorsal plate to abdomen and the male is without the posterior forceps-like appendages (legs?).

***Locustacarus trachealis*, new species.**

Female.—When nongravid, minute, with a broad, short body; when gravid, body distended at its middle until several times its former size. Capitulum as broad as long and about two-thirds as long as cephalothorax. Chelicerae when thrust out seem to be about as long as cephalothorax. Palpi greatly reduced, fused with beak and each terminated by two spine-like tubercles.

Cephalothorax as broad as long and provided above with three pairs of large setae; one pair situated laterally at the base of capitulum, one pair situated above the bases of first legs and one pair situated above the bases of second legs. Sternum formed by the junction of first and second epimera and extending backward along the median line to about the middle of the body in non-gravid specimens and ending in a transverse bar, or T.

Abdomen somewhat larger than cephalothorax and with almost straight posteriorly converging sides. On the abdomen above there is situated at the shoulders a pair of setae which reach scarcely half way to the posterior margin of the body; at each side, somewhat in front of the posterior corner of abdomen, is a long seta, equal to the total length of abdomen; at the tip of abdomen are two enormous setae, situated approximate and usually adhering for their whole length, which are longer than the body of the mite itself.

Legs stout, particularly the first pair. Tarsus of leg I one and a half times as long as broad; tibia broader than long; patella exceedingly short, disc-like femur much the stoutest segment. Last pair of legs more slender than the others and decidedly posterior in position; each tarsus with a long tactile seta.

Length when nongravid, 0.168 mm.; width 0.095 mm.

Male.—Similar to the nongravid female, but body more rounded and lacking the enormous setae at the tip. Posterior setae of cephalothorax stouter than in female and situated dorsally. Legs somewhat more slender than those of female, particularly those of the third pair. Penis dorsal, extending as a spear-like shaft of chitin from about the middle of the back to the tip of capitulum. It is very suggestive of the penis of *Psorergates*.

Length, 0.133 mm.; width, 0.099 mm.

Type locality.—Kansas.

Type.—Cat. No. 23773, U. S. N. M.

An abundance of material (hundreds of individuals) received from Dr. P. S. Welch, of the University of Michigan. This material consists chiefly of females in various states of engorgement, and eggs, but also of several nongravid females and males. It was taken from the tracheae of grasshoppers. Descriptions based chiefly on specimens mounted on type slide.

Tetrapolipus rhynchophori, new species.

Gravid female.—Abdomen enormously swollen making the gravid individual easily visible to the unaided eye. Capitulum about one-half as broad as cephalothorax and slightly longer than broad. Palpi greatly reduced and fused with beak for most of their length, showing no segmentation. Chelicerae rather short, slightly curved needles, almost straight at their bases.

Cephalothorax about as broad as long, narrowed in front where it joins the capitulum; above and posteriorly the cephalothorax bears a broad shield with a broadly and evenly rounded posterior border. No dorsal setae observed on cephalothorax.

Abdomen in gravid specimens pear-shaped with the greatest diameter near its junction with the cephalothorax. Usually only a single fully developed egg present. Dorsally a transverse groove is present slightly behind the middle of abdomen; posterior margin notched at the median line.

Legs short, cone-shaped, almost twice as long as broad at their bases; four evident segments; first segment much the longest, and about as long as the other three put together; second and third segments equal in length; last segment very small. Tarsus I with a single claw; tarsus II with two claws.

Length, 0.435 mm.; width 0.348 mm.

Male.—Short, broad. Capitulum very distinct from cephalothorax, sub-circular. Palpi fused with beak, greatly reduced and showing no segmentation.

Cephalothorax as broad as long and about equal in size to the abdomen. Above only a single pair of dorsal setae present which is situated dorso-laterally near the posterior angles. These setae slightly surpass the cephalothorax in length.

Abdomen as broad as long and indistinctly segmented near the tip. It is without setae dorsally. Penis long, spear-shaped, arising dorsally near the front margin of abdomen and extending forward in a median groove to the apex of capitulum.

Legs about equal. Femur much the largest segment; patella broader than long; tibia longer than patella and as long as broad and in each case bearing a long tactile seta; tarsus somewhat hooked and ending in one or two spurs, each bearing a pair of claws and a large pulvillus.

Length, 0.172 mm.; width, 0.105 mm.

Type locality.—Panama.

Type.—Cat. No. 23774, U. S. N. M.

Description based on a single male and several females, taken from underneath the elytra of a palm weevil, *Rhynchophorus palmarum*, collected at Cocoplum Bocas del Toro, Panama, February 9, 1922, by J. R. Johnston. This weevil was sent to Dr. E. A. Schwarz for determination along with several other species of Coleoptera taken from palms, and H. S. Barber called my attention to the infesting mites. Most of the mites were attached to the dorsal body wall of the abdomen. Several nymphs and many eggs were present. This species is similar to *T. batocerae* Berlese, taken from a Javan longicorn beetle, but has a much shorter cephalothorax and much smaller legs than the Old World species.